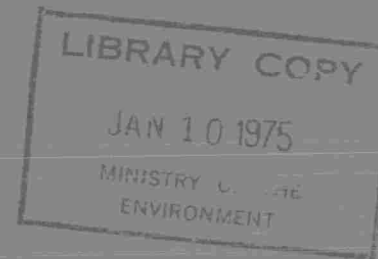


OPERATING SUMMARY

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CHESTERVILLE

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CHESTERVILLE
WATER POLLUTION CONTROL PLANT
and
WATER SUPPLY SYSTEM

operated by
the

MINISTRY OF THE ENVIRONMENT

1973 ANNUAL OPERATING SUMMARY



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WATER SUPPLY SYSTEM

DESIGN DATA

PROJECT NO. 6-0046-59
TREATMENT Ground Water

Well No. 1 - 10" dia. casing
52' deep
150 gpm

Well No. 2 - 10" dia. casing
bottom of screen 49' deep
40 gpm

Elevated Tank - 125,000 gal.

Distribution System - 6 & 8
inch dia. pipe.

'73 Review

GENERAL

This system consists of two deep wells, a water distribution system and a 125 thousand gallon elevated tank.

The Chesterville Water Treatment Works treated an estimated total of 23.36 million gallons of water during 1973.

The elevated tank was drained and repainted during the summer of 1973.

All repairs undertaken at the plant were of a minor nature.

EXPENDITURES

The operating costs for 1973 incurred by the Ministry of the Environment were \$15,071., up from \$7582 in the previous year. The cost of treating one thousand gallons of water averaged 65 cents. All operating costs reflect a 50 per cent division in salaries between the sewage and water treatment projects.

CONCLUSIONS

The operation and maintenance of the plant has been satisfactory.

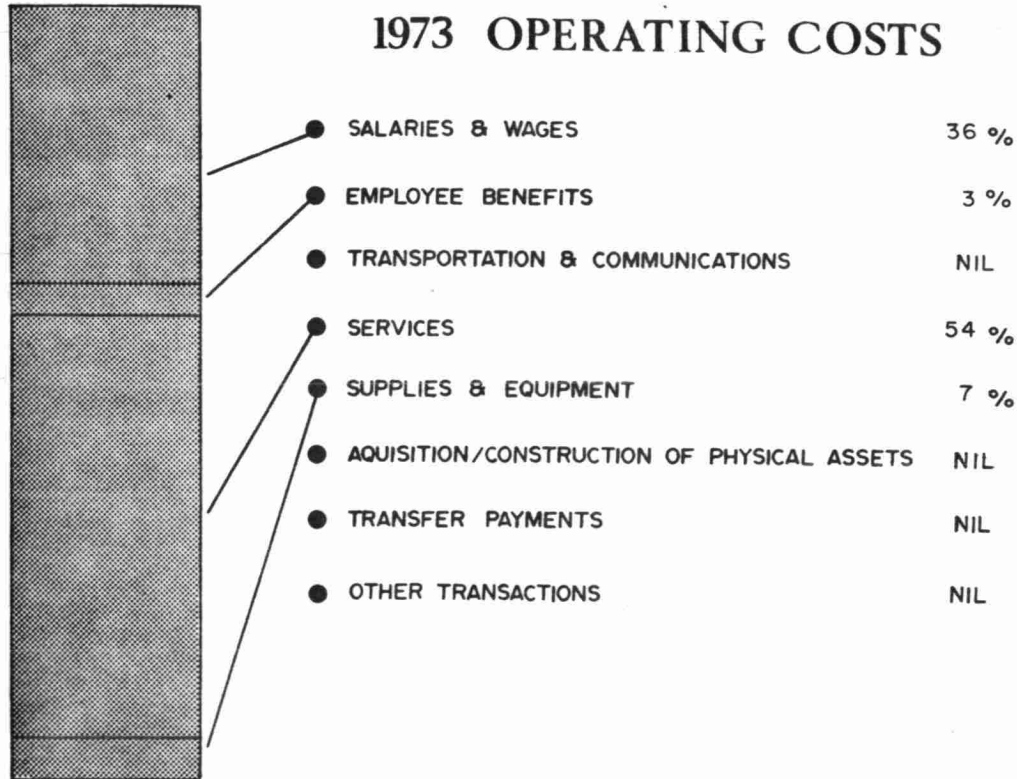
The average daily flow is 20 per cent of the nominal well capacity and during peak flow periods the maximum daily demand flow is 31 per cent of the nominal well capacity.

OPERATING EXPENDITURES

SALARIES AND WAGES	<u>\$ 5,500</u>
EMPLOYEE BENEFITS	<u>406</u>
TRANSPORTATION & COMMUNICATIONS	<u>0</u>
SERVICES	<u>8,144</u>
SUPPLIES AND EQUIPMENT	<u>1,021</u>
ACQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	<u>0</u>
TRANSFER PAYMENTS	<u>0</u>
OTHER TRANSACTIONS	<u>0</u>
TOTAL	<u>\$ 15,071</u>

ANNUAL COSTS

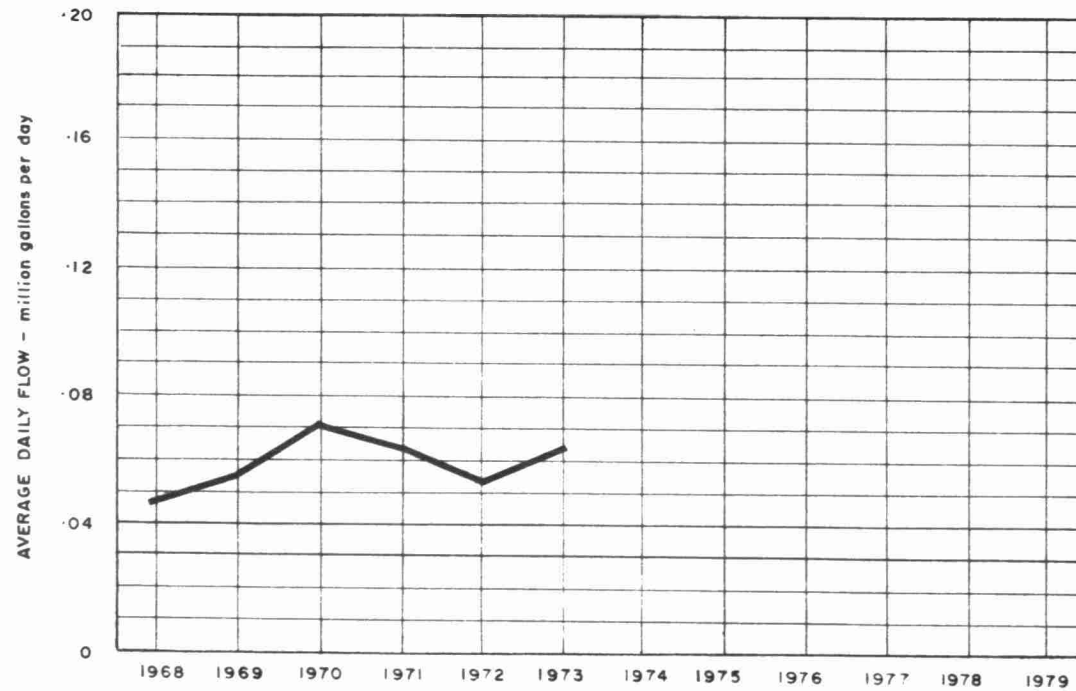
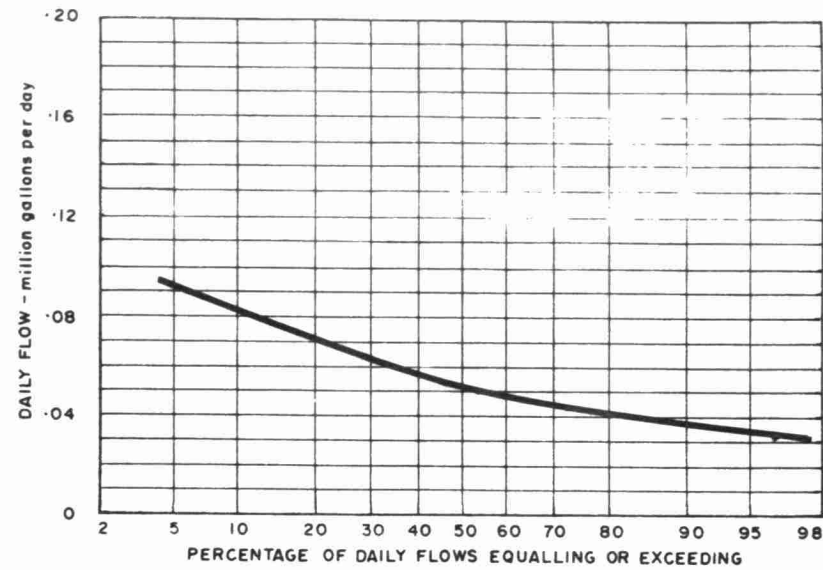
1973 OPERATING COSTS



YEARLY OPERATING COSTS

YEAR	WATER TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS
			cents per 1000 gal.
1972	19.35	\$ 7,581	39
1973	23.36	15,071	65

PROCESS DATA FLOWS



TREATMENT DATA

MONTH	FLOWS			
	TOTAL PLANT OUTPUT	AVERAGE DAILY FLOW	MAXIMUM DAY'S FLOW	MAXIMUM RATE
	million gallons	million gallons/day	million gallons	million gallons/day
JAN	1.59	0.051	0.072	0.230
FEB	1.45	0.052	0.068	0.230
MAR	2.14	0.69	0.83	0.230
APR	1.64	0.54	0.086	0.230
MAY	2.20	0.071	0.085	0.230
JUNE				0.230
JULY	2.73	0.088	0.109	0.230
AUG	2.24	0.075	0.111	0.230
SEPT	1.96	0.065	0.107	0.230
OCT	1.71	0.55	0.73	0.230
NOV	1.91	0.064	0.109	0.230
DEC	1.91	0.62	0.093	0.230
TOTAL	23.36 *			
AVG.		0.064	MAXIMUM 0.111	MAXIMUM 0.230

* Estimated

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF NaOCl gallons	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
											PRE - mg/l	POST - mg/l	
	0	1 - 3	4 - 32	33 - 320	> 320								
JAN	3		0	0				6	0	29.7		2.3	0.6
FEB	0		0	0				0	0	25.6		2.1	0.6
MAR	1		0	0				11	0	34.2		1.9	0.5
APR	0		0	0				0	0	25.5		1.9	0.5
MAY	1		0	0				10	0	36.4		2.0	0.5
JUNE	0		2	0				11	0	81.6			0.7
JULY	1		0	1				7	0	51.3		2.3	0.5
AUG	0		0	1				8	2	38.4		2.0	0.5
SEPT	1		0	1				18	0	33.1		2.0	0.5
OCT	0		0	0				0	0	28.2		2.0	0.5
NOV	0		0	0				0	0	32.1		2.0	0.5
DEC	0		0	0				0	0	30.5		1.8	0.5
TOTAL	7		2	3				71	2	446.6			
AVG.	5 (NOTE - Average shown is the GEOMETRIC MEAN)									1.2 gallons per day		2.3	0.5

WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as CaCO_3	2	362	368	356					80 - 100
ALKALINITY in mg/l as CaCO_3	2	285	286	284					30 - 100
IRON in mg/l Fe	2	0.65	0.75	0.55					Less than 0.3
CHLORIDE in mg/l Cl^-	2	83	104	62					Less than 250
pH in pH units	2	7.5	7.6	7.4					7.0 - 8.5

WATER POLLUTION CONTROL PLANT

DESIGN DATA

PROJECT NO.	1-0048-66	Approximately 23,000 linear feet of sewer ranging from 8" - 18"
TREATMENT	Stabilization Pond	1350 feet of 8 inch forcemain 1 General Supply Co. prefabric- ated sewage pumping station.
DESIGN FLOW	160,000 gpd	360 US gpm @ 25' TDH
DESIGN POPULATION	2,000	12.5 acre stabilization pond

'73 Review

GENERAL

This system consists of a pre-fabricated underground pumping station, a forcemain, a sewage collection system, and a 12.5 acre waste stabilization pond.

The Chesterville sewage treatment works treated 49.11 million gallons of sewage in 1973. This represents an average daily flow of 0.13 million gallons.

It appeared that a considerable amount of ground water gained access to the sewer system. Efforts are being made by plant staff to locate and repair any deficient areas of the sewage collection system.

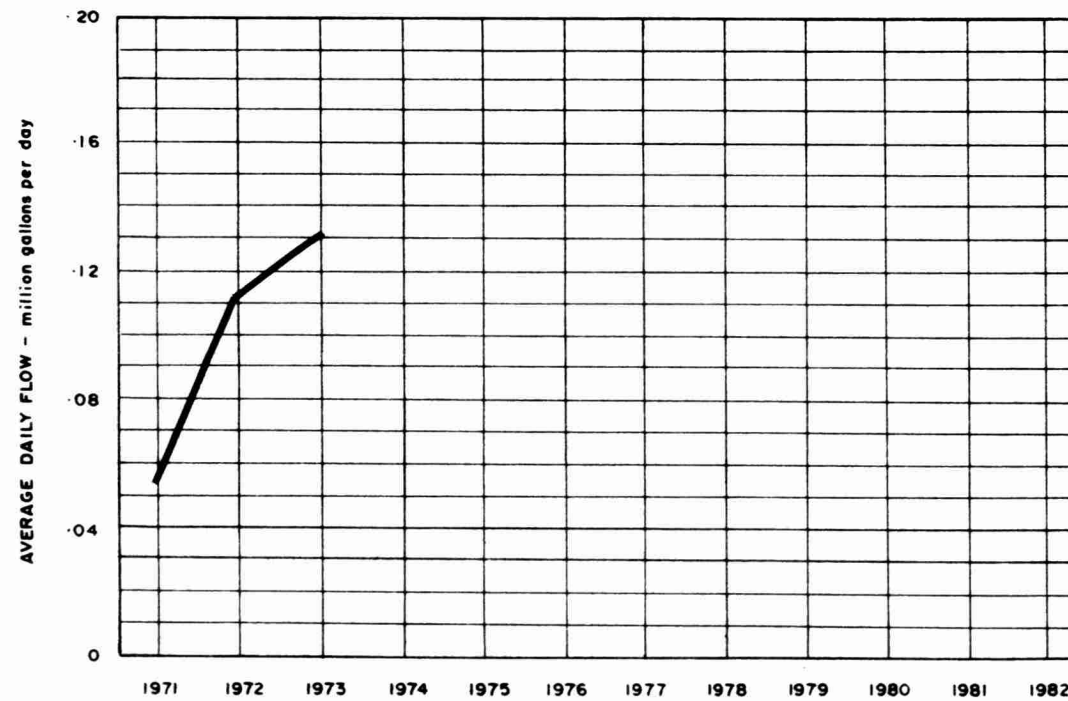
All repairs undertaken at the plant were of a minor nature.

CONCLUSIONS

A concentrated effort will be made by the staff during 1974 in an attempt to locate and remove any sources of ground water that are gaining access into the sewer system.

The organic loading of the lagoon is 48 per cent of maximum, however the hydraulic capacity is 24 per cent overloaded. Steps will be taken in the near future to rectify the problem.

PROCESS DATA FLOWS



PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND			SUSPENDED SOLIDS			PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	LOADING	INFLUENT	EFFLUENT		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	lb./acre/day	mg/l	mg/l		mg/l P	mg/l P
JAN	3.96	0.13								7.7	
FEB	3.86	0.14									
MAR	8.72*	0.28								1.6	
APR	5.08	0.17								3.7	0.9
MAY	5.03	0.16									
JUNE	4.69	0.16								3.9	
JULY	2.98	0.10									
AUG	2.52	0.08									
SEPT	2.56	0.08								5.1	
OCT	2.99	0.10									
NOV	2.52	0.08		108		5.9	90			4.6	
DEC	4.20*	0.14									
TOTAL	49.11	-	-	-	-	-	-	-	-	-	-
AVG.		0.13	MAXIMUM	108		5.9	90			4.4	0.9
No. of Samples	-	-	-	2		- -	1		- -	12	1

*Estimated

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